

REMARKS

In the Office Action dated July 5, 2007, the drawing as originally filed was objected to under 37 C.F.R. §1.83(a), the Examiner stating "at least the device must be shown."

Additionally, claims 1-3 were rejected under 35 U.S.C. §112, second paragraph, as being indefinite because the Examiner stated in claim 1, it is unclear whether the 3D volume data are stored in the processor or on a data carrier, and the Examiner also stated claim 1 was being interpreted as 3D volume data and software stored in a processor, that is stored on a data carrier, and the Examiner stated that the Examiner is unsure how this configuration is accomplished. Claim 2 was rejected in view of this interpretation of claim 1.

In response to both the drawing objection and the rejection under §112, the original figure has been labeled as Figure 1, and a new Figure 2 has been added, which is a schematic block diagram of an exemplary embodiment of a device constructed and operating in accordance with the present invention. Text has been added to the specification to correspond to the components shown in Figure 2, and new independent claim 4 is submitted herein (claims 1-3 having been cancelled), that conforms to the block diagram in the exemplary embodiment of Figure 2. New claims 5 and 6 generally conform to the subject matter of original claims 2 and 3, but have been editorially revised to be consistent with their dependency from new independent claim 4.

Applicants submit that the addition of Figure 2 and the corresponding specification text are supported in the disclosure as originally filed in accordance with the provisions of 35 U.S.C. §112, first paragraph. As explained in the text in the

substitute specification beginning at page 3, line 24 and continuing through page 4, line 27, in accordance with the present invention a computer is provided that allows a more experienced person, such as a neuroradiologist to visualize and analyze a 3D data record representing a medical image so that the visualization software, that is used to visually display the image, can be provided with special instructions, such as setting visualization parameters, that cause the visualized representation of the medical image to highlight or clearly show particular medical details, that are necessary or desirable for conducting a particular medical procedure, such as a surgery.

At the computer, the experienced operator then generates a data carrier, such as by burning a CD, that includes both the visualization software with the special instructions (parameter settings) as well as containing the 3D data record itself. This generated data carrier can then be provided to a person responsible for actually conducting the medical procedure, so that person can easily see the relevant structures in the displayed image, as a result of the parameter settings that have been united with the 3D data file in the visualization software that is included in the generated data carrier. The person responsible for conducting the medical procedure, who may not have the same level of experience in creating a visual representation wherein these details are readily apparent, thus need only insert the generated CD in another computer and, without the need for any input on the part of the second physician, the relevant anatomical details are clearly displayed for the second physician.

In the example given at the bottom of page 4 of the substitute specification, a neuroradiologist edits a 3D data record that has been obtained with an angiography

unit, in such a way an aneurysm is effectively displayed, i.e., by making the aforementioned parameter settings based on the superior experience of the neuroradiologist, and burns a CD for a neurosurgeon. The neurosurgeon then plays the CD on a standard personal computer, and not only does not need specialized visualization software, but also does not need to make any manipulations on his or her own in order to cause the desired anatomy to be clearly shown in the displayed image.

Applicant respectfully submits that all of the above was clearly explained in the specification as originally filed, and therefore neither Figure 2 nor the corresponding specification text constitutes new matter.

As noted above, claims 1-3 have been cancelled and new claims 4-6 are submitted in their place. Original claims 1-3 were rejected under 35 U.S.C. §103(a) as being unpatentable over a manual for a computer game entitled "Unreal Tournament." The Examiner acknowledged that Unreal Tournament does not expressly disclose that the data stored on the CD is 3D volume data, but the Examiner stated Unreal Tournament is a 3D game, and uses 3D video devices for rendering the game world. The Examiner stated it would have been obvious to a person of ordinary skill to make use of 3D data in a 3D video game, because it would allow for real-time update of objects within a scene, as the viewing point of a player changes.

Applicants submit that new independent claim 4 has no point of intersection, or even overlap, with any of the contents of the unreal tournament reference, but under the assumption that the Examiner may still consider the Unreal Tournament

manual to be relevant to the subject matter of claims 4-6, Applicants will respond to the aforementioned rejection.

As noted above, the ultimate “output” of the device of claim 4 is a generated data carrier, such as a CD, that unites visualization software with special parameter settings, with a 3D data file that will be visualized according to the “customized” visualization software. No such output of a generated data carrier is produced, or is capable of being produced, in the Unreal Tournament reference.

Moreover, the device of claim 4 operates on a 3D data file, more specifically a data file representing a medical image that is entered into the device, for the purpose of allowing a user to selectively highlight specific items in the visualized display, such as anatomical items that are important for making a diagnosis or for conducting a medical procedure.

The Examiner acknowledged that the Unreal Tournament does not disclose that the data stored on the CD are 3D volume data, but stated it would have been obvious “to have used 3D data” in the Unreal Tournament game. Applicants do not agree with this conclusion by the Examiner, because in a computer game it is not only possible, but typical, to generate the spatial representations without 3D volume data, primarily because the processing of 3D volume data is very computation-intensive, and therefore very time-intensive, and thus is not suitable for real-time games. Applicant respectfully submits that if a computer game were “burdened” with the necessity of processing large amounts of 3D volume data, this would actually slow down the game and make it less interesting for the players, and therefore less marketable, and therefore undesirable in the context of a computer game.

Moreover, even if the Examiner's conclusion were accepted, this would simply mean that certain features of the displayed images, or all of the displayed images, would be rendered in a 3D visualization, and this still would not conform to the language of claim 4, allowing a user to selectively alter the 3D visualization to highlight particular items in the displayed image. There is no teaching or suggestion in the Unreal Tournament description that would suggest, or even permit, a user to selectively identify or determine which displayed images, or which portion of a displayed image, should be visualized three-dimensionally. Moreover, for the same reasons noted above, most players would be unwilling to take the extra time during the course of playing a game to make such a selection, and therefore it is unlikely whether this would even be a desirable feature for inclusion in a video game.

Applicants therefore submit that all claims of the application are in condition for allowance, and early reconsideration of the application is respectfully requested.

The Commissioner is hereby authorized to charge any additional fees which may be required, or to credit any overpayment to account No. 501519.

Submitted by,



(Reg. 28,982)

SCHIFF, HARDIN LLP

CUSTOMER NO. 26574

Patent Department

6600 Sears Tower

233 South Wacker Drive

Chicago, Illinois 60606

Telephone: 312/258-5790

Attorneys for Applicants.